
CHAPTER SIX – AIRPORT PLANS

OVERVIEW

The purpose of an approved Airport Layout Plan (ALP) is to serve as the blueprint for future airport development. One condition of accepting and utilizing grant funding for airport improvement projects is to maintain an updated ALP. For the Knox County Regional Airport (RKD), the updated development recommendations presented in this Master Plan Update are pictorially summarized in the ALP Drawing Set and include the preferred concepts for airfield development (e.g., runway extension, new taxiways), apron and hangar development, and other support facilities. The ALP Drawing Set represents a scaled, graphic presentation of RKD's 20-year development program. The ALP provides the County Commission of Knox County (ACFC) with a feasible improvement plan that would increase the capability and safety of aircraft operations, promote compatibility with existing and proposed developments, and further upgrade the airport as a means of meeting the anticipated demand of general aviation, corporate, and commercial traffic. The drawings depict the recommendations of this Master Plan Update with regard to aviation development for the short, intermediate, and long-term planning periods.

The dimensional information provided in the drawings demonstrates compliance with minimum airport design standards established by federal, state, and local authorities. The ALP Drawing Set was developed in accordance with the guidance outlined in the FAA Advisory Circular (AC) 150/5070-6, Airport Master Plans, AC 150/5300-13A, Airport Design, and other supporting circulars and orders.

The ALP Drawing Set includes the following individual drawing sheets:

- Sheet 1 - Title Sheet
- Sheet 2 - Data Tables Plan
- Sheet 3 - Existing Facilities Plan
- Sheet 4 - Airport Layout Plan
- Sheet 5 - Terminal Area Drawing
- Sheet 6 - Runway 13 Plan and Profile
- Sheet 7 - Runway 31 Plan and Profile
- Sheet 8 - Runway 3 Plan and Profile
- Sheet 9 - Runway 21 Plan and Profile
- Sheet 10 - Airport Airspace Plan

Full size 24" x 36" (ARCH D) sheets were produced as part of this master plan update and were submitted as separate documents. Reduced size reproductions of the drawing sheets are provided at the end of this chapter for illustration purposes only.

TITLE SHEET (SHEET 1)

The Cover Sheet serves as the introduction to the ALP Drawing Set. It includes the airport name, a location map, vicinity map, and an index of drawings included in the ALP Drawing Set. Also highlighted on the Title Sheet are the project name and the sponsor's name and logo, and date.

DATA TABLES PLAN (SHEET 2)

Sheet 2 contains several data tables that are keyed to the ALP set. These include the Airport Data Table, Runway Data Table, and Facilities Building Table. In addition, the airport's Wind Rose and legends are also provided on the Data Sheet.

EXISTING FACILITIES PLAN (SHEET 3)

This drawing depicts existing facilities and is similar to the Airport Layout Plan except it does not present proposed development.

AIRPORT LAYOUT PLAN (SHEET 4)

The Airport Layout Plan Drawing, also referred to as the ALP, depicts all existing facilities and proposed developments planned over the 20-year planning period at RKD. These plans are reviewed by and must be approved by the FAA prior to authorizing federal funding for future improvement projects. The ALP provides clearance and dimensional information required to show conformance with applicable FAA design standards as outlined in FAA AC 150/5300-13A, Airport Design. The ALP also reflects planned changes to physical features on the airport property and critical land use changes near the airport property that may affect navigable airspace or the ability of the airport to operate. The features of the ALP include, but are not limited to runways, taxiways, lighting, navigational aids, terminal facilities, hangars, other airport buildings, aircraft parking areas, automobile parking and airport access elements.

Key dimensional criteria for safety areas and facilities associated with Runway 13-31 were based on FAA design standards associated with Airport Reference Code (ARC) B-II and an ARC of B-II was applied to Runway 3-21. This criteria dictates the size of the runways and various taxiways, runway safety areas and runway object free areas, building restriction lines, and navigational aid critical areas, and other dimensional data recommended by the FAA. Airport coordinates, runway end elevations, runway high and low points, and true azimuths for each runway, are also included on the Airport Layout Plan Drawing. Supplemental tables, as required by the FAA ALP Checklist, are depicted on Sheet 2 the Airport Data Sheet including the Airport Data Table, Runway Data Table, and Building Data Table.

TERMINAL PLAN (SHEET 5)

The Terminal Area Drawings present an enlarged view of the terminal area and therefore provide additional dimensional details, including apron areas (existing and proposed) that are not easily visible on the ALP. This drawing denotes the short and long-term developments and improvements within the vicinity of the terminal complex at RKD.

RUNWAY PLAN AND PROFILE (SHEETS 6, 7, 8 & 9)

The Runway Approach and Protection Zone Drawings show both plan and profile views of the approach surfaces beyond each runway end. The purpose of these drawings is to locate and document existing objects, which represent obstructions to navigable airspace within the existing and proposed approach slopes for each runway. Additionally, the drawings show the ground profile and terrain features along the extended centerline of each runway end. Any controlling structures, such as roadways, natural ground elevations, and trees, are also shown on the Plan and Profile Drawings, if applicable. Additionally, fixed objects located along the extended runway centerlines are also illustrated on the sheets to provide an indication of the relative distance to the approach surfaces.

AIRPORT AIRSPACE PLAN (SHEET 6)

Federal Aviation Regulations (FAR) Part 77, Objects Affecting Navigable Airspace, prescribes airspace standards, which establish criteria for evaluating navigable airspace. Airport imaginary surfaces are established relative to the airport runways and types of approaches they provide. The size of each imaginary surface is based on the runway category with respect to the existing and proposed visual, non-precision, or precision approaches for that runway. The slope and dimensions of the respective approach surfaces are determined by the most demanding, existing or proposed, approach for each runway. For Runway 13-31 at RKD, the imaginary surfaces are primarily applicable to the precision Instrument Landing System (ILS) approach to the Runway 13 end. The approaches to Runway 3 are non-precision based on a utility runway, and visual to the Runway 3 end, however non-precision approach capability is recommended for both runway ends in the future. The imaginary surfaces definitions include:

- **Primary Surface** - A rectangular area symmetrically located about the runway centerline and extending a distance of 200 feet beyond each runway end. Its elevation is the same as the nearest point along the runway edge. The existing primary surface width for both runways is 500 feet.
- **Horizontal Surface** - An oval shaped, flat area situated 150 feet above the published airport elevation of 55 feet at RKD. Its dimensions are determined by using 10,000-foot arcs for non-utility runways, in this case Runway 13-33 and 5,000 feet for utility (centered 200 feet beyond each runway end) connected with a line tangent to those arcs. The horizontal surface elevation for RKD is 205 feet Above Mean Sea Level (AMSL).
- **Conical Surface** - A sloping area whose inner perimeter conforms to the shape of the

horizontal surface. It extends outward for a distance of 4,000 feet measured horizontally, and slopes upward at a 20:1 ratio. RKD's conical surface extends upward to an elevation of 405 feet AMSL.

- **Transitional Surface** - A sloping area beginning at the edges of the primary and approach surfaces and sloping upward and outward at a ratio of 7:1.
- **Approach Surface** - This surface begins at the ends of the primary surface and slopes upward at a predetermined ratio while at the same time flaring out horizontally. The width and elevation of the inner ends conforms to that of the primary surface, while the slope, length, and outer width are determined by the runway service category and existing or proposed instrument approach procedures.

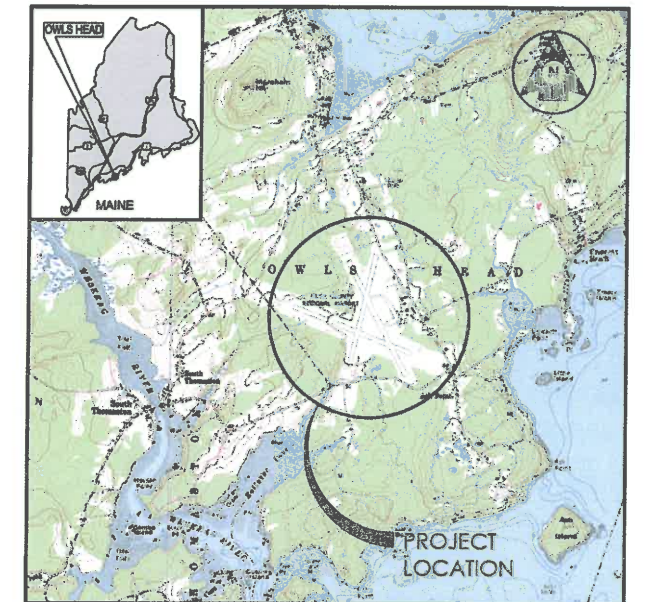
SUMMARY

The ALP Drawing Set is intended to depict RKD's capital development program in graphical form. Prior to incorporating the developments herein, preliminary plans were presented to the APAC members and to the public for their review and approval. Thus, this plan set accurately reflects the goals and intentions of airport management and adjacent community throughout the 20-year planning period.

KNOX COUNTY REGIONAL AIRPORT OWLS HEAD, MAINE

AIRPORT MASTER PLAN UPDATE

JANUARY 2015
A.I.P PROJECT NO. 3-23-0042-42-2012

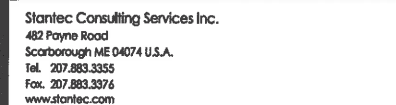


VICINITY MAP
NOT TO SCALE



INDEX OF SHEETS

SHEET NO.	TITLE
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2.	DATA TABLES PLAN
3.	EXISTING FACILITIES PLAN
4.	AIRPORT LAYOUT PLAN
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6.	RUNWAY 13 PLAN AND PROFILE
7.	RUNWAY 31 PLAN AND PROFILE
8.	RUNWAY 3 PLAN AND PROFILE
9.	RUNWAY 21 PLAN AND PROFILE
10.	AIRPORT AIRSPACE PLAN

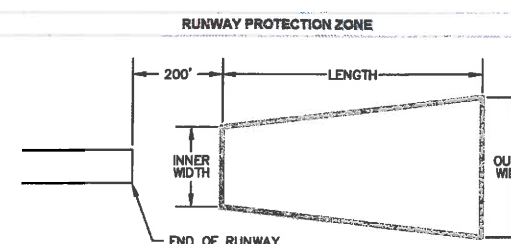


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Legend

Notes

DECLARED DISTANCES				
RUNWAY END ID	TORA	TODA	ASDA	LDA
03	N/A	N/A	N/A	N/A
21	N/A	N/A	N/A	N/A
13	5,407	5,407	5,407	5,007
31	5,007	5,407	5,407	5,007



EXISTING						
RUNWAY	APPROACH TYPE	VISIBILITY	INNER WIDTH	OUTER WIDTH	LENGTH	ACRES
3	NON-PRECISION	1 MILE	500'	700'	1,000'	13.77
21	VISUAL	3 MILES	500'	700'	1,000'	13.77
13	PRECISION	LESS THAN 3/4 MILE	1000'	1,750'	2,500'	78.91
31	NON-PRECISION	1 MILE	500'	700'	1,000'	13.77
PROPOSED						
RUNWAY	APPROACH TYPE	VISIBILITY	INNER WIDTH	OUTER WIDTH	LENGTH	ACRES
3	NON-PRECISION	1 MILE	500'	700'	1,000'	13.77
21	VISUAL	3 MILES	500'	700'	1,000'	13.77
13	PRECISION	LESS THAN 3/4 MILE	1000'	1,750'	2,500'	78.91
31	NON-PRECISION	1 MILE	500'	700'	1,000'	13.77

RUNWAY 3-21 DATA TABLE					
RUNWAY DATA	RUNWAY 3		RUNWAY 21		
	EXISTING	PROPOSED	EXISTING	PROPOSED	
Utility Runway (Y/N)		NO		NO	
Runway Design Code (RDC)		B-II-4000		B-II-4000	
Pavement Strength & Material Type		ASPHALT		ASPHALT	
Strength by Wheel Loading		SW: 65.0, DW: 80.0		SW: 65.0, DW: 80.0	
Pavement Classification Number (PCN)		N/A		N/A	
Surface Treatment		NONE		NONE	
Effective Runway Gradient	0.10%	-0.10%	0.10%	-0.10%	
Percent Wind Coverage		13 KTS		13 KTS	
Runway Length		4,000'		4,000'	
Runway Width		100'		100'	
Displaced Threshold (Distance/Elevation)	NONE	NONE	NONE	NONE	
Runway End Coordinates					
Latitude	44° 03' 21.6900" N	44° 03' 21.6900" N	44° 03' 21.6900" N	44° 03' 21.6900" N	
Longitude	069° 06' 02.6900" W	069° 06' 02.6900" W	069° 06' 02.6900" W	069° 06' 02.6900" W	
Elevation	50.2'	55.1'	50.2'	55.1'	
Runway Lighting Type		MIRL		MIRL	
Approach Lighting	NONE	NONE	NONE	NONE	
Vertical Glide Slope Indicator Lights (VGSIL)	PAPI-4L	PAPI-4L	NONE	PAPI-4L	
Runway Marking Type	NON-PRECISION	NON-PRECISION	NON-PRECISION	NON-PRECISION	
14 CFR Part 77 Approach Category	NON-PRECISION	NON-PRECISION	NON-PRECISION	NON-PRECISION	
Approach Type	RNAV (GPS), NDB	VISUAL	RNAV (GPS)	RNAV (GPS)	
Visibility Minimums	1 MILE	3 MILES	1 MILE	1 MILE	
Type of Required Aeronautical Survey	NON-VERTICALLY GUIDED	NON-VERTICALLY GUIDED	NON-VERTICALLY GUIDED	NON-VERTICALLY GUIDED	
Runway Departure Surface (Y/N)	NO	NO	NO	NO	
Runway Safety Area (RSA)					
RSA Length Beyond Departure End	300	300	300	300	
RSA Length Prior to Threshold	300	300	300	300	
RSA Width		150		150	
Object Free Area (OFA)					
OFA Length Beyond Departure End	300	300	300	300	
OFA Length Prior to Threshold	300	300	300	300	
OFA Width		500		500	
Obstacle Free Zone (OFZ)					
OFZ Length	250	250	250	250	
OFZ Width		200		200	
Precision Obstacle Free Zone (POFZ)					
POFZ Length	N/A	N/A	N/A	N/A	
POFZ Width		N/A		N/A	
Threshold Siting Surface (TSS)	NO TSS PENETRATIONS	NO TSS PENETRATIONS	NO TSS PENETRATIONS	NO TSS PENETRATIONS	
Visual and Instrument NAVAIDS	PAPI, REILS	PAPI, REILS	NONE	PAPI, REILS	
Touchdown Zone Elevation	53.5'	55.4'	53.5'	55.4'	
Taxiway Design Group	TG2	TG2	TG2	TG2	

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KNOX COUNTY REGIONAL AIRPORT

AIRPORT MASTER PLAN UPDATE

OWLS HEAD, MAINE

Title

DATA TABLES

Project No. 195210603	Scale AS NOTED
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	Revision



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NO.	DESCRIPTION	TOP ELEVATION
1	Down East Hangars	69.9'
2	Terminal Building	74.6'
3	Telford Aviation Hangar	72.6'
6	Airport Maintenance	66.3'
7	Snow Removal Equipment Building	76.1'
8	House	78.0'
9	Barn	68.2'
10	Electric Vault	62.0'
11	Flying Club Hangars	74.5'

Notes



0 100' 200'

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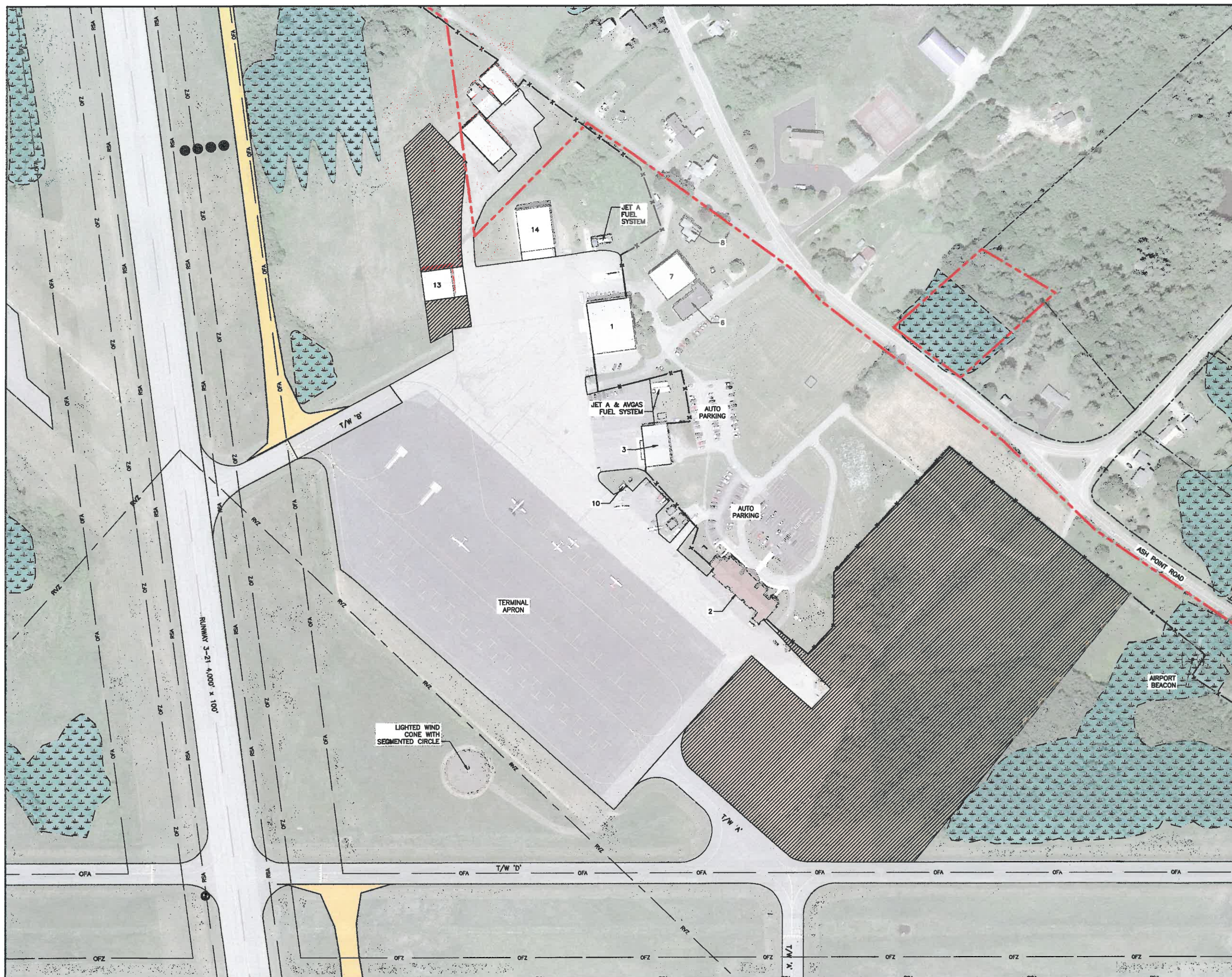
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OWLS HEAD, MAINE

Title
TERMINAL PLAN

Project No. 195210603	Scale AS NOTED	
Drawing No.	Sheet 5 of	Revision 0





LEGEND	EXISTING	PROPOSED
AIRPORT PROPERTY LINE	---	N/A
ABUTTERS' PROPERTY LINE	---	N/A
EXISTING 10' CONTOUR	---	N/A
FENCE	x-x	N/A
PAVEMENT	---	---
REIL	---	---
PAPI	---	---
BUILDINGS	---	N/A
OBJECT-FREE ZONE (OFZ)	N/A	---
OBJECT-FREE AREA (OFA)	N/A	---
RUNWAY SAFETY AREA (RSA)	N/A	---
BUILDING RESTRICTION LINE (BRL)	N/A	---
WETLANDS (DELINEATED)	---	N/A
FUTURE DEVELOPMENT (AVIATION)	N/A	---
FUTURE DEVELOPMENT (NON-AVIATION)	N/A	---
OBSTRUCTION LIGHT	---	N/A

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Stantec Consulting Services Inc.
482 Payne Road
Scarborough, ME 04074 U.S.A.
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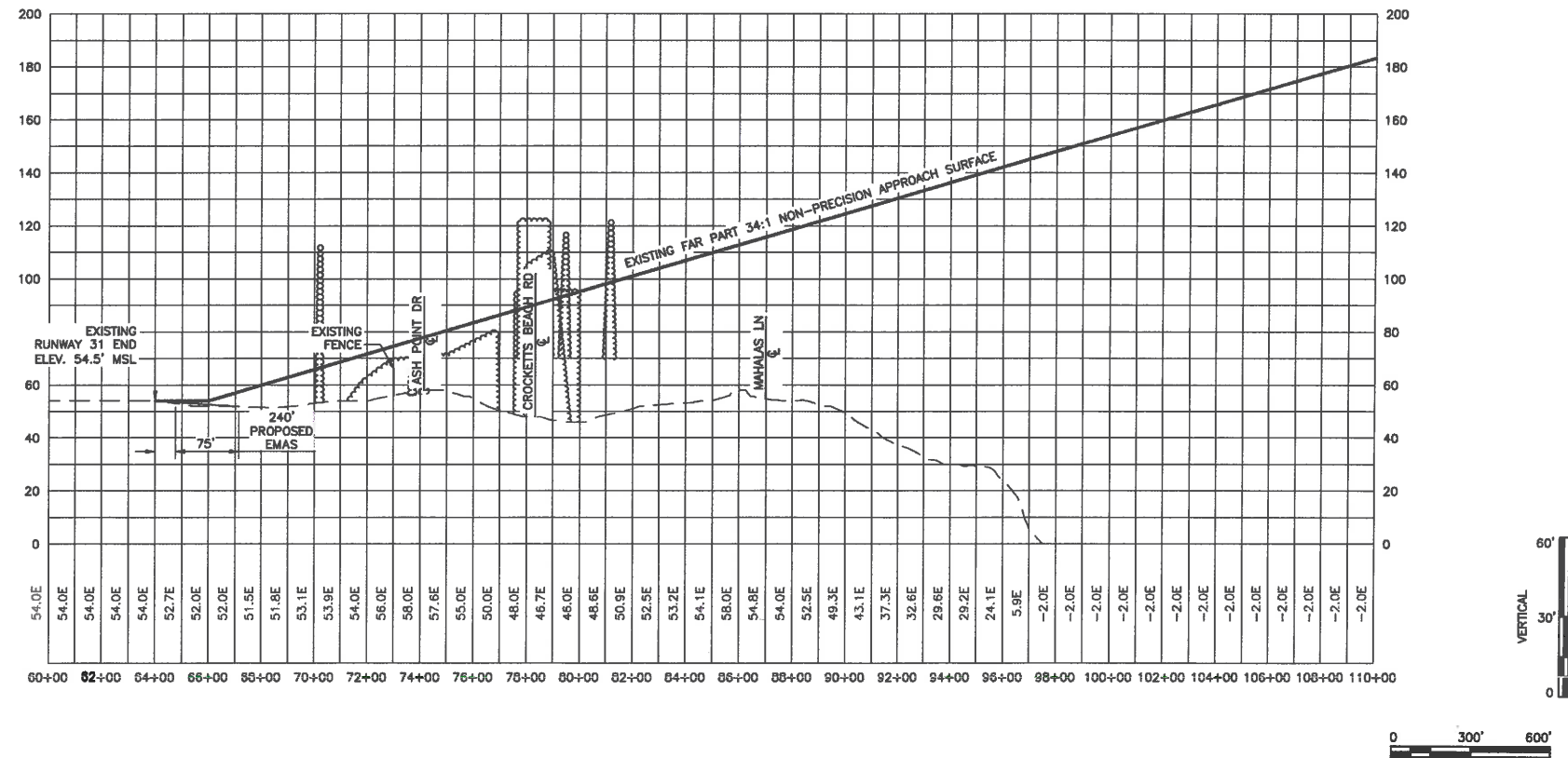
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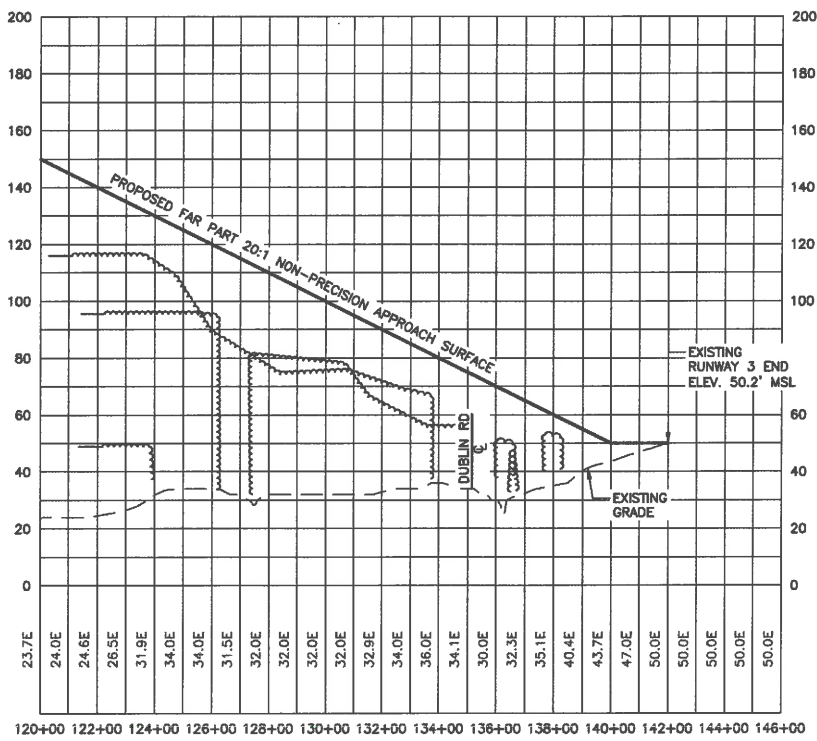
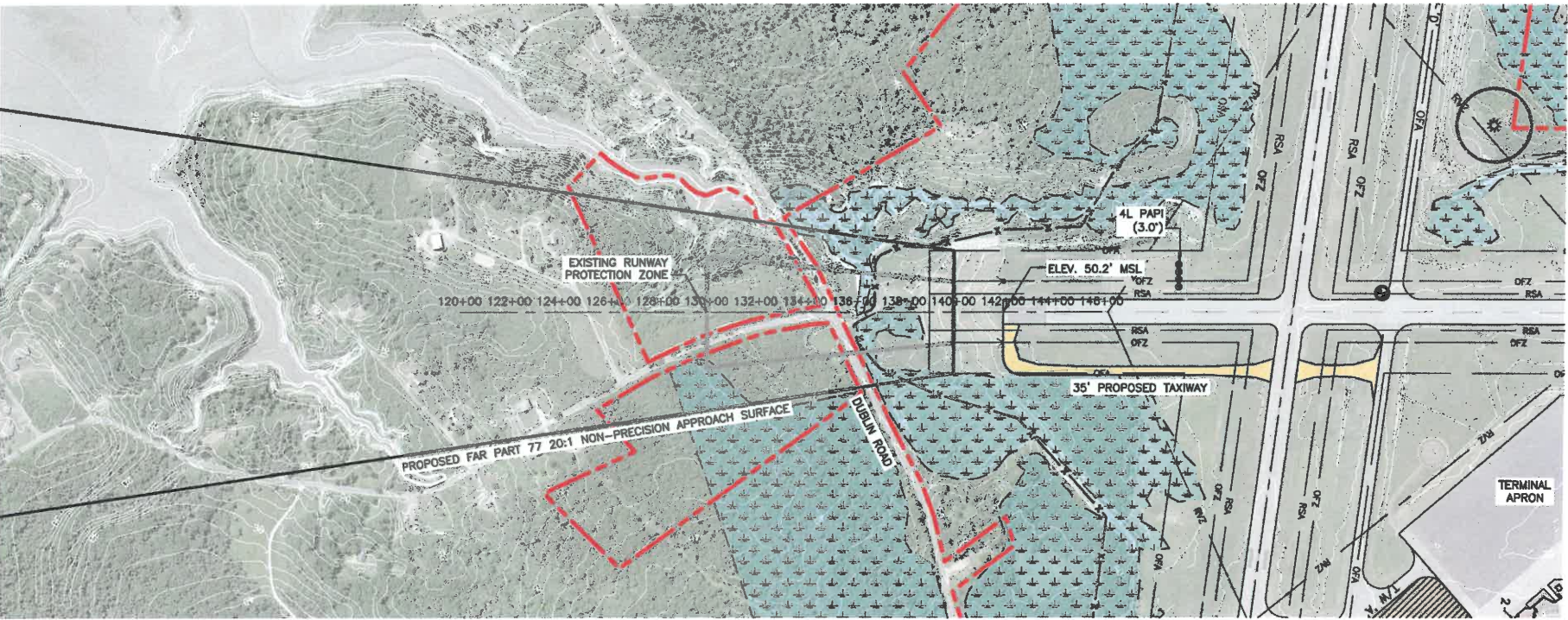
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AIRPORT MASTER PLAN UPDATE

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Title
RUNWAY 31
PLAN AND PROFILE

Project No. 195210603	Scale AS NOTED
Drawing No.	Sheet
	Revision



LEGEND	EXISTING	PROPOSED
AIRPORT PROPERTY LINE	---	N/A
ABUTTERS' PROPERTY LINE	---	N/A
EXISTING 10' CONTOUR	---	N/A
FENCE	X X	N/A
PAVEMENT	---	---
REIL	---	---
PAPI	---	---
BUILDINGS	---	N/A
OBJECT-FREE ZONE (OFZ)	N/A	---
OBJECT-FREE AREA (OFA)	N/A	---
RUNWAY SAFETY AREA (RSA)	N/A	---
BUILDING RESTRICTION LINE (BRL)	N/A	---
WETLANDS (DELINEATED)	---	N/A
FUTURE DEVELOPMENT (AVIATION)	N/A	---
FUTURE DEVELOPMENT (NON-AVIATION)	N/A	---
OBSTRUCTION LIGHT	---	N/A



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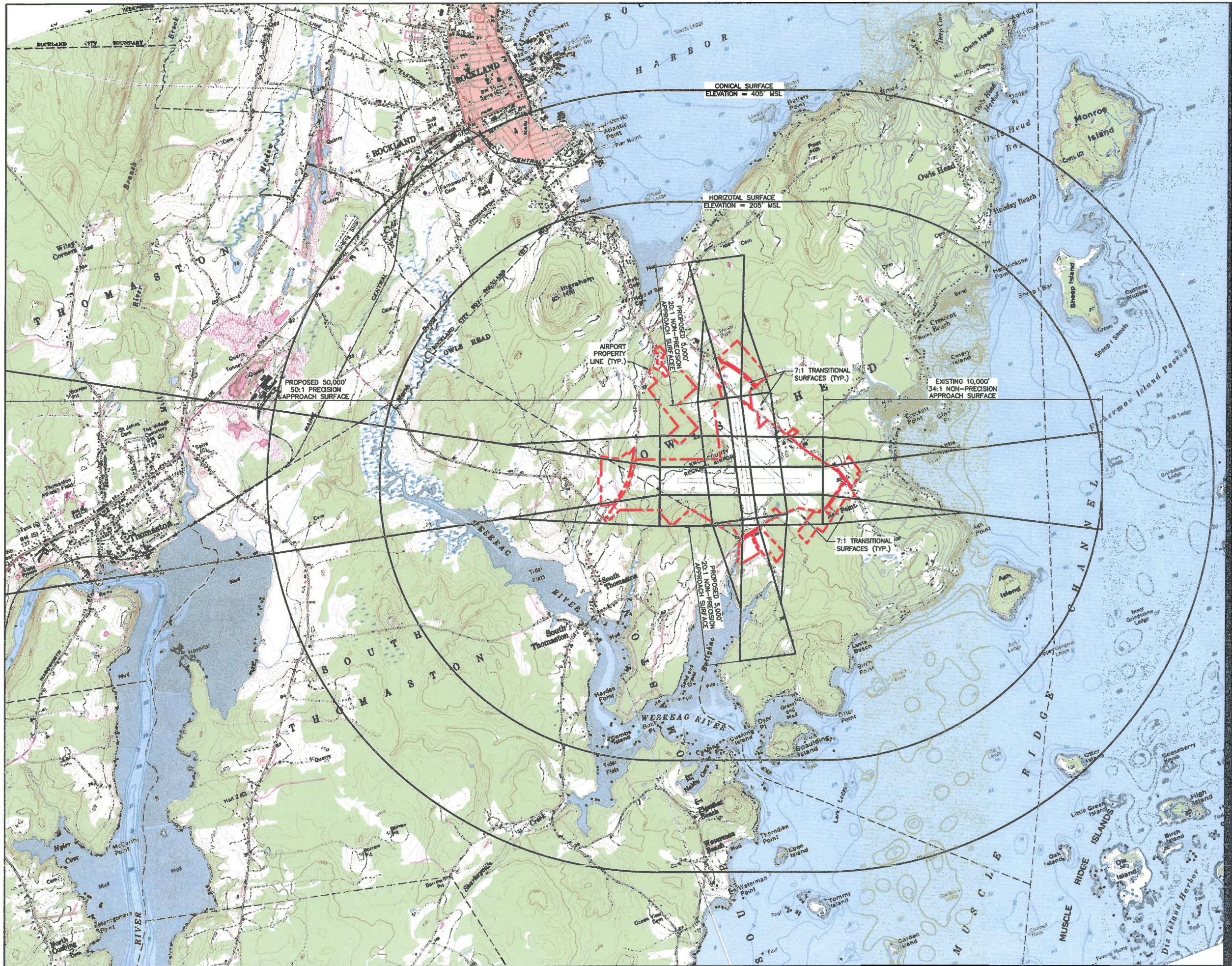


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Title
RUNWAY 3
PLAN AND PROFILE

Project No. 195210603	Scale AS NOTED
Drawing No.	Sheet Revision



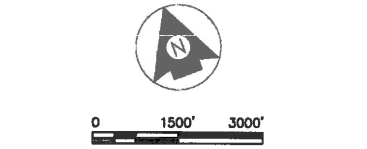
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AIRPORT MASTER PLAN UPDATE

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AIRPORT AIRSPACE PLAN

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